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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/943,424
Filing Date: August 30, 2001
Appellant(s): KLIGER ET AL.

Joel Weiss
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 22 December 2009 appealing from the Office action mailed 12 June 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of independent claims 71, 82, and 96 under 35 USC 103(a) over Bushmitch et al. (US 6950399) in view of Silverman (US 6307862) and Bell (US 6229818).

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6081519	Petler	6-2000
6229818 b1	Bell	5-2001
6307862 b1	Silverman	10-2001
4608685	Jain et al.	8-1986

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections – 35 USC 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 71, 73-76, 78-82, 84-86, 88-89, 96, 98-101, and 103-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petler (US 6081519) in view of Silverman (US 6307862) and Bell (US 6229818).

For Claim 71, Petler teaches, in a home network having a plurality of network modules, each of said plurality of network modules being connected to a coax backbone, a method for communicating over the coax backbone between the plurality of network modules (see column 4 lines 34-50), the method comprising:

using the master module to receive requests sent over the coax backbone from the plurality of network modules for bandwidth to transmit bursts (see column 6 lines 8-23, column 10 lines 20-50);

establishing an order of transmission opportunities for the plurality of network modules to follow when transmitting bursts to other network modules via the coax backbone (see column 6 lines 24-45, column 2 lines 9-34); and

using the master module to transmit an allocation burst over the coax backbone that allocates a transmission opportunity to each of the plurality of network modules to transmit bursts to other network modules via the coax backbone (see column 2 lines 9-55, column 7 lines 20-45), said transmission opportunity that depends at least in part on the amount of data ready for transmission in a selected transmission cycle (see column 6 lines 8-23 and 45-67), said allocation burst being based on said transmission order (see column 6 lines 9-34).

As applied above, Petler does not teach one of said plurality of network modules being a network master module; and establishing direct communication between the plurality of the network modules and a demarcation point unit, said plurality of network modules being coupled to the demarcation point unit via the coax backbone, said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from the master module.

However, Silverman teaches one of said plurality of network modules being a network master module (see Figure 5 and column 2 line 60 to column 4 line 9); and establishing direct communication between the plurality of the network modules and a demarcation point unit, said plurality of network modules being coupled to the demarcation point unit via the coax backbone, said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from the master module (see Figure 5 and column 2 line 60 to column 4 line 9; Figure 8 and column 4 line 66 to column 5 line 19).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to use the demarcation unit and master module taught by Silverman in the home networking method taught by Petler. The motivation for doing so would be to provide a secure means to separate the home network from the cable delivery network while allowing existing wiring to be used for the home network.

The references as applied above do not teach establishing direct communication between each of the plurality of network modules over the coax backbone. However, Bell teaches establishing direct communication between each of the plurality of network modules over the coax backbone (see column 5 lines 22-59, column 6 lines 54-64, and column 8 lines 17-25).

Thus it would have been obvious to a person of ordinary skill in the art to allow the network modules to communicating direct over an existing physical medium (see column 2 lines 6-12), as taught by Bell. The motivation for doing so would be to reduce the load on the master module taught by Silverman and improve the throughput in the home network.

For Claim 82, Petler teaches a home network comprising:

a coax backbone (see column 4 lines 33-50);

a plurality of network modules, each of said plurality of network modules being connected to the coax backbone (see column 4 lines 33-50),

said plurality of network modules being in communication via at least one splitter over the coax backbone (see column 4 lines 33-62, Figure 1 item 220); and

the master module that receives requests from the plurality of network modules over the coax backbone, the requests being for bandwidth to transmit bursts over the coax backbone to other network modules (see column 6 lines 8-23, column 10 lines 20-50),

the master module that establishes a transmission order of transmission opportunities for the plurality of network modules to follow when transmitting bursts to other network modules (see column 6 lines 24-45, column 2 lines 9-34) and that transmits a burst over the coax backbone that allocates a transmission opportunity to each of the plurality of network modules to transmit bursts (see column 2 lines 9-55, column 7 lines 20-45), said burst being based on said transmission order (see column 6 lines 9-34), said transmission order being based at least in part on said received requests (see column 10 lines 20-50, column 6 lines 8-67), wherein each of the plurality of network modules is configured to communicate with other network modules via the coax backbone (see column 6 lines 8-23) and wherein a parameter of a transmission opportunity for a selected network module depends at least in part on an amount of data ready for transmission at the selected network module in a selected transmission cycle (see column 6 lines 8-23, column 6 lines 45-67).

Petler does not teach said plurality of network modules being in direct communication with a demarcation point unit over the coax backbone; said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from a master module; and the network master module being connected to the coax backbone.

However, Silverman teaches said plurality of network modules being in direct communication with a demarcation point unit over the coax backbone (see Figure 5, column 2 line 60 to column 4 line 9, Figure 8, column 4 line 66 to column 5 line 19);

said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from a master module (see Figure 5, column 2 line 60 to column 4 line 9, Figure 8, column 4 line 66 to column 5 line 19); and

the network master module being connected to the coax backbone (see Figure 5, column 2 line 60 to column 4 line 9, Figure 8, column 4 line 66 to column 5 line 19).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to use the demarcation unit and master module taught by Silverman in the home networking method taught by Petler. The motivation for doing so would be to provide a secure means to separate the home network from the cable delivery network while allowing existing wiring to be used for the home network.

The references as applied above do not teach establishing direct communication between each of the plurality of network modules over the coax backbone. However, Bell teaches establishing direct communication between each of the plurality of network modules over the coax backbone (see column 5 lines 22-59, column 6 lines 54-64, and column 8 lines 17-25).

Thus it would have been obvious to a person of ordinary skill in the art to allow the network modules to communicating direct over an existing physical medium (see column 2 lines 6-12), as taught by Bell. The motivation for doing so would be to reduce

the load on the master module taught by Silverman and improve the throughput in the home network.

For Claim 96, Petler teaches an integrated circuit storing computer-executable instructions which, when executed by a processor on a computer system, perform a method, the method comprising:

in a home network having a plurality of network modules, each of said plurality of network modules being connected to a coax backbone, said plurality of network modules communicating over the coax backbone (see column 4 lines 34-50), the communicating comprising:

using the master module to receive requests sent over the coax backbone from the plurality of network modules for bandwidth to transmit bursts (see column 6 lines 8-23, column 10 lines 20-50);

in response to receiving the requests, establishing an order of transmission opportunities for the each of the plurality of network modules to follow when transmitting bursts to other network modules (see column 6 lines 24-45, column 2 lines 9-34); and

using the master module to transmit an allocation burst over the coax backbone that allocates a transmission opportunity to each of the plurality of network modules to transmit bursts (see column 2 lines 9-55, column 7 lines 20-45), said allocation burst being based on said transmission order (see column 6 lines 9-34), said transmission opportunity that depends at least in part on the amount of data ready for transmission in a selected transmission cycle (see column 6 lines 8-23 and 45-67).

Petler does not teach one of said plurality of network modules being a network master module, establishing direct communication between two or more of the plurality of network modules over the coax backbone; and establishing direct communication between two or more of the plurality of the network modules and a demarcation point unit, said plurality of network modules being coupled to the demarcation point unit via the coax backbone, said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from the master module.

However, Silverman teaches one of said plurality of network modules being a network master module (see Figure 5 and column 3 lines 12-28), establishing direct communication between two or more of the plurality of network modules over the coax backbone (see Figure 5 and column 3 lines 12-28); and establishing direct communication between two or more of the plurality of the network modules and a demarcation point unit, said plurality of network modules being coupled to the demarcation point unit via the coax backbone, said demarcation point unit providing an interface between the home network and an external network, said demarcation point unit being separate from the master module (see column 2 line 60 to column 4 line 9; Figure 8 and column 4 line 66 to column 5 line 19).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to use the demarcation unit and master module taught by Silverman in the home networking method taught by Petler. The motivation for doing so would be to

provide a secure means to separate the home network from the cable delivery network while allowing existing wiring to be used for the home network.

The references as applied above do not teach establishing direct communication between each of the plurality of network modules over the coax backbone. However, Bell teaches establishing direct communication between each of the plurality of network modules over the coax backbone (see column 5 lines 22-59, column 6 lines 54-64, and column 8 lines 17-25).

Thus it would have been obvious to a person of ordinary skill in the art to allow the network modules to communicating direct over an existing physical medium (see column 2 lines 6-12), as taught by Bell. The motivation for doing so would be to reduce the load on the master module taught by Silverman and improve the throughput in the home network.

For Claims 73 and 98, although Petler teaches a master module (see Figure 1 item 110 and column 2 line 65 to column 3 line 7), and Silverman teaches a master module (see Figure 5 and column 3 lines 12-28), the references as applied above do not teach designating one of the plurality of network modules to be the master module. However, Bell teaches designating one of the plurality of network modules to be the master module (see column 5 lines 22-59, column 6 lines 54-64, and column 8 lines 17-25). Thus it would have been obvious to a person of ordinary skill in the art to designate a module to operate as a master module, combining the functions of the BNU and BIU, which operate as a master module outside the home as taught by Petler. The motivation for doing so would be to improve home network security by keeping LAN

communications within the home, and to allow the wide area network service provider to increase revenues by selling or leasing master modules to consumers and to offload the costs of operating the master module onto the consumers.

For Claims 74, 84, and 99, Petler further teaches synchronizing the plurality of network modules to a predetermined burst transmitted by the master module (see Figure 7).

For Claims 75, 85, and 100, Petler further teaches allocating bandwidth to each of the plurality of network modules requesting a guaranteed quality of service (see column 6 lines 8-24: CBR is the guaranteed quality of service).

For Claims 76, 86, and 101, Petler further teaches receiving over the backbone, at a selected network module, a grant signal that indicates that the given network module can transmit a burst (see column 6 lines 46-58).

For Claims 78 and 103, Petler further teaches changing the amount of allocated bandwidth (see column 6 lines 7-23).

For Claims 79, 88, and 104, Petler further teaches using the master module to change the order of transmission opportunities (see column 9 lines 10-25: the modules will transmit in a different order because each time BNU assigns a different one or more time slots to the modules).

For Claims 80 and 105, Petler further teaches using the master module to change the order of transmission opportunities and to change the amount of allocated bandwidth (see column 9 lines 10-25 and column 6 lines 7-23).

For Claims 81, 89, and 106, Petler further teaches using the master module to allocate an opportunity to a module involved in a registration process, said opportunity for transmitting a self-training burst (see column 10 lines 20-33).

5. Claims 77, 87, and 102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petler (US 6081519), Silverman (US 6307862), and Bell (US 6229818) as applied to claims 71, 82, and 96 above, and further in view of Jain et al. (US 4608685).

For Claims 77, 87, and 102, the references as applied above do does not teach transmitting, by a selected network module, an empty burst if the given network module has no data to transmit. However, Jain teaches transmitting, by a selected network module, an empty burst if the given network module has no data to transmit (see column 6 lines 8-12). Thus it would have been obvious to a person of ordinary skill in the art to use a null, or empty, transmission in place of a heartbeat transmission. A person of ordinary skill in the art would have been able to carry out such a substitution and the results were reasonably predictable.

(10) Response to Argument

In the appeal brief, applicant submits that Petler cannot be combined with Silverman and Silverman cannot be combined with Bell to teach the independent claims 71, 82, and 96.

With respect to applicant's confusion over which device might play the role of the master module, please refer to the cited portions of Petler (see column 6 lines 8-23, column 10 lines 20-50), from which it should be clear that the Broadband Network Unit (BNU) (see item 110/120 in Figure 1) provides the claimed functions of the master module which are taught by Petler. The claimed functions of the master module which are taught by Silverman are provided by the LAN controller in Figure 5 (see also column 2 line 60 to column 4 line 9 for a detailed description of the LAN controller functions).

With respect to applicant's argument that Petler teaches away from a combination with a home network method as taught by Silverman, please refer to the entire paragraph of Petler from which applicant has quoted two lines out of context (column 2 lines 34-50). While Petler does indeed indicate that an "in-home coaxial network is not well suited for sending signals directly from one device to another", Petler also goes on to explain why ("the splitters in the home which allow cable TV signals to be distributed within the home are designed to exhibit low reflections for signals coming from within the home", which merely indicates a need to modify the splitters) and to teach one way of resolving the issue.

With respect to applicant's argument that the networks of Silverman and Petler cannot be combined because Petler's network sends local area network (LAN) signals out of the home to the BNU while Silverman's network keeps the LAN signals within the home, please refer to Petler (column 3 lines 8-16). Petler does indicate that it is counterintuitive to send LAN signals out to the BNU and back into the home, thereby providing motivation to move the pertinent functionality of the BNU into the home in

order to keep the signals within the home, while retaining the advantages of Petler's network over more complex in-home networks.

With respect to applicant's argument that the networks of Petler and Silverman cannot be combined because Petler's system sends LAN signals outside the home while Silverman's system keeps LAN signals inside the home (p. 8 line 13 to p. 9 line 7 of the brief), it should be noted, as indicated in the preceding paragraph, that it is this difference which provides the motivation to combine the two systems.

Moreover, both systems are directed towards keeping LAN signals on the LAN and preventing LAN signals from entering the CATV network. Silverman accomplishes this through the use of a demarcation unit (see Silverman, column 5 lines 9-19). Petler accomplishes this through the BNU's function of distinguishing LAN signals either by routing indicators or by allocating particular time slots for LAN signals (see Petler, column 9 lines 10-25). If the bandwidth allocation functionality provided by the BNU is moved inside the home, then Silverman's demarcation unit may simply be substituted for the functions of the BNU which serve to keep LAN signals on the LAN.

It is unclear why applicant raises the issue of the sharing of network bandwidth with CATV signals when this feature is common to the systems of both Petler and Silverman. While Silverman teaches stripping out some CATV channels and using those channels for the LAN, Silverman also teaches an embodiment in which the LAN uses channels which lie outside the frequency band of the CATV signals (see Silverman, column 4 lines 59-65). Likewise, Petler teaches the LAN using channels

which lie outside the frequency band of the CATV signals (see Petler, column 9 lines 40-56).

With respect to applicant's argument that Silverman requires exclusive use of bandwidth for LAN traffic while Petler uses a shared medium (p. 9 lines 8-16 of the brief), please consider that both systems use a particular portion of the bandwidth for LAN traffic and both systems teach the use of a shared medium. In both systems, LAN devices use bandwidth which is not occupied by CATV channels as explained in the preceding paragraph. Meanwhile, in both systems, the transmission medium is shared among LAN devices through a time slot-based allocation of the medium (see Silverman, column 3 line 65 to column 4 line 9, and Petler, column 9 lines 56-64). The systems of Petler and Silverman are thus entirely compatible in these regards.

With respect to applicant's argument that the network of Silverman cannot coexist with the network of Bell because Silverman does not teach the use of a shared medium while Bell does (see page 9 line 17 to page 10 line 5 of the brief), it should be noted that Silverman does teach the use of the a shared transmission medium as explained in the preceding paragraph (see Silverman, column 3 line 65 to column 4 line 9). Therefore the LAN of Bell can coexist with the LAN of Silverman.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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